

## **How to Read the Test Reports SCIENCE**

### **Overview of Grades 4, 8, and 11**

#### **Grade 4**

##### **Charts 4.1 – 4.4: Statewide by District Size Category (horizontal charts)**

- Arranged from the bottom of the chart up beginning with the state and going up the left side of the chart in the order of district-size category, small to large.
- The district size categories and the number of students tested in that district size category are labeled.
- The percents along the bottom of the chart are the NPRs.
- 

#### **Grade 8**

##### **Charts 8.1 – 8.4: Statewide by District Size Category (horizontal charts)**

- Arranged from the bottom of the chart up beginning with the state and going up the left side of the chart in the order of district-size category, small to large.
- The district size categories and the number of students tested in that district size category are labeled.
- The district size categories are by size of the district and type.
- The percents along the bottom of the chart are the NPRs.

#### **Grade 11**

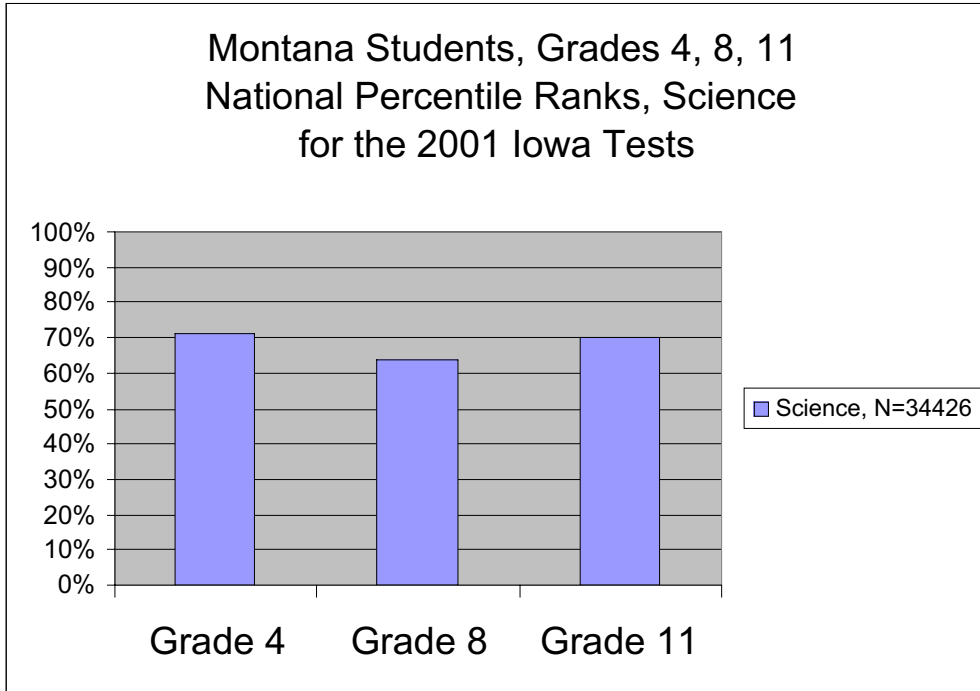
##### **Charts 11.1 – 11.4: Statewide by District Size Category (horizontal charts)**

- Arranged from the bottom of the chart up beginning with the state and going up the left side of the chart in the order of district-size category, small to large.
- The district size categories and the number of students tested in that district size category are labeled.
- The district size categories are by size of the district and type.
- The percents along the bottom of the chart are the NPRs.

## Science, Grades 4, 8, and 11

**Chart 1: 4, 8, 11 SC**

The chart below shows the National Percentile Ranks for grades 4, 8, and 11. Grades 4 and 11 scored an NPR of about 71% while grade 8 students scored 64%.



**Table 1: 4, 8, 11 SC**

The table below shows the percentage of students for each disaggregation scoring in the combined Proficient and Advanced categories (P+A) and the Novice category for each of the three grades.

Groups	Grade 4		Grade 8		Grade 11	
	P + A Stanines 5-9	Novice Stanines 1-3	P + A Stanines 5-9	Novice Stanines 1-3	P + A Stanines 5-9	Novice Stanines 1-3
All Students	82%	8%	78%	10%	81%	10%
Students Without Disabilities	85%	7%	82%	7%	84%	8%
Students With Disabilities	61%	19%	40%	37%	41%	38%
Female Students	82%	8%	71%	8%	85%	7%
Male Students	83%	8%	75%	12%	78%	12%
Native American Students	60%	20%	50%	29%	62%	19%
White Students	86%	6%	82%	8%	83%	9%
Students on Free/Reduced Lunch	73%	13%	64%	18%	70%	16%

**Table 2: 4, 8, 11 SC**

National Percentile Rank for each disaggregation across Montana.

<b>Groups</b>	<b>Grade 4</b>	<b>Grade 8</b>	<b>Grade 11</b>
All Students	71%	64%	70%
Students Without Disabilities	72%	67%	72%
Students With Disabilities	50%	36%	32%
Female Students	70%	65%	72%
Male Students	72%	63%	67%
Native American Students	50%	42%	51%
White Students	73%	67%	71%
Students on Free/Reduced Lunch	59%	53%	58%

**Table 3: 4, 8, 11 SC**

Customized Skills Reports: Montana Science Standards tested in the Iowa Tests

<b>Standard</b>	<b>Grade 4</b>		<b>Grade 8</b>		<b>Grade 11</b>	
	# of Items	Percent Correct	# of Items	Percent Correct	# of Items	Percent Correct
Design, conduct, evaluate and communicate investigations.	19	60%	28	68%	45	56%
Understand physical and chemical systems.	5*	69%	14	65%	9*	53%
Understand the structures and functions of living things.	10	67%	7	59%	5*	59%
Understand Earth's systems and interactions.	8	67%	8*	59%	1*	64%
Understand the impact of science and technology on society.	2*	58%	3*	55%	1*	61%
* The Iowa Tests measure the knowledge dimension of the Montana Standard, but do not adequately measure the application aspect.						

**Table 4: 4, 8 SC**

NAEP data from 1996 and 2000 are included to add to the picture of student achievement in Science. Although NAEP data give another perspective to the picture of Montana students in grades four and eight tested in 1996 and 2000, these are not the same 4<sup>th</sup> or 8<sup>th</sup> grade students measured in the 2001 statewide assessment.

With the scores for Montana White and Montana Native American students are the percent of students who scored basic or above. It should be noted that the number of White students tested is considerably larger and therefore, generalizations are safer. For example, in the 2000 grade 4 test, 948 Montana White students and 98 Montana Native American students were included in the testing sample.

	<b>Average Score</b>					
<b>Grade:Year</b>	<b>All National</b>	<b>White National</b>	<b>Native American National</b>	<b>All Montana</b>	<b>White Montana</b>	<b>Native American Montana</b>
<b>4: 2000</b>	150	160	140	160	164 (86%)	145 (63%)
<b>8: 1996</b>	150	159	148	162	166 (83%)	139 (44%)
<b>8: 2000</b>	151	162	134	165	168 (84%)	143 (49%)

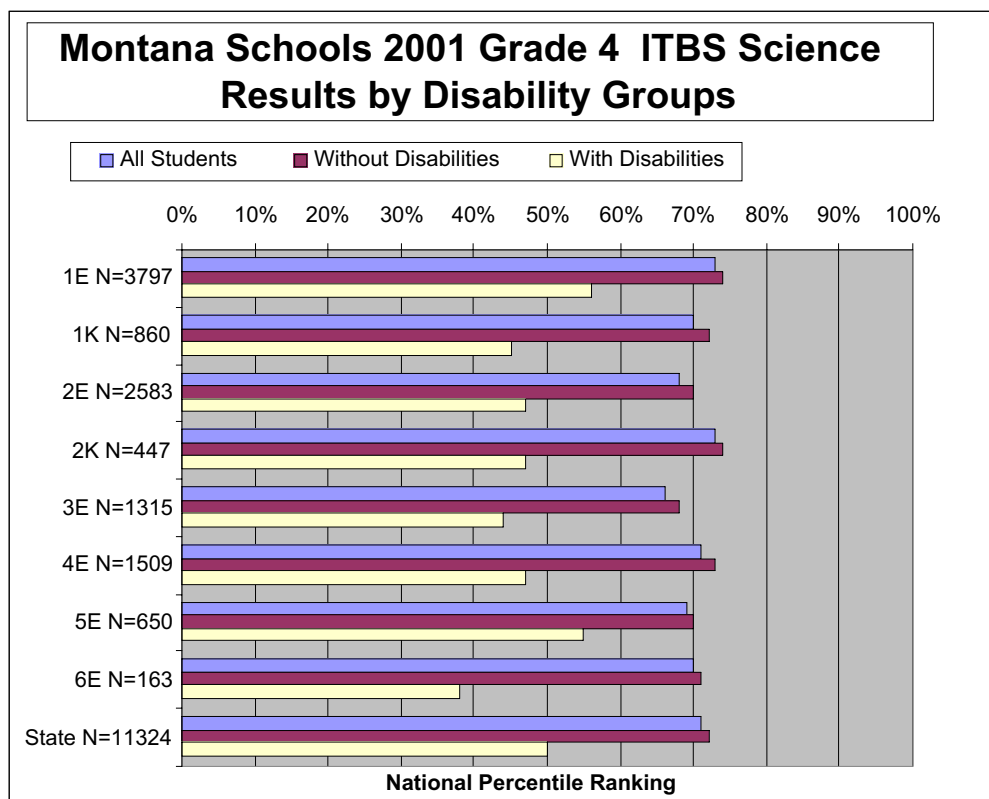
**Table 5: 11 SC**

ACT Science Reasoning results for the high school graduating class of 2001.

<b>Average Score All National</b>	<b>Average Score All Montana</b>	<b>Average Score White Montana</b>	<b>Average Score Native American Montana</b>
21.0	21.9	22.1	18.4

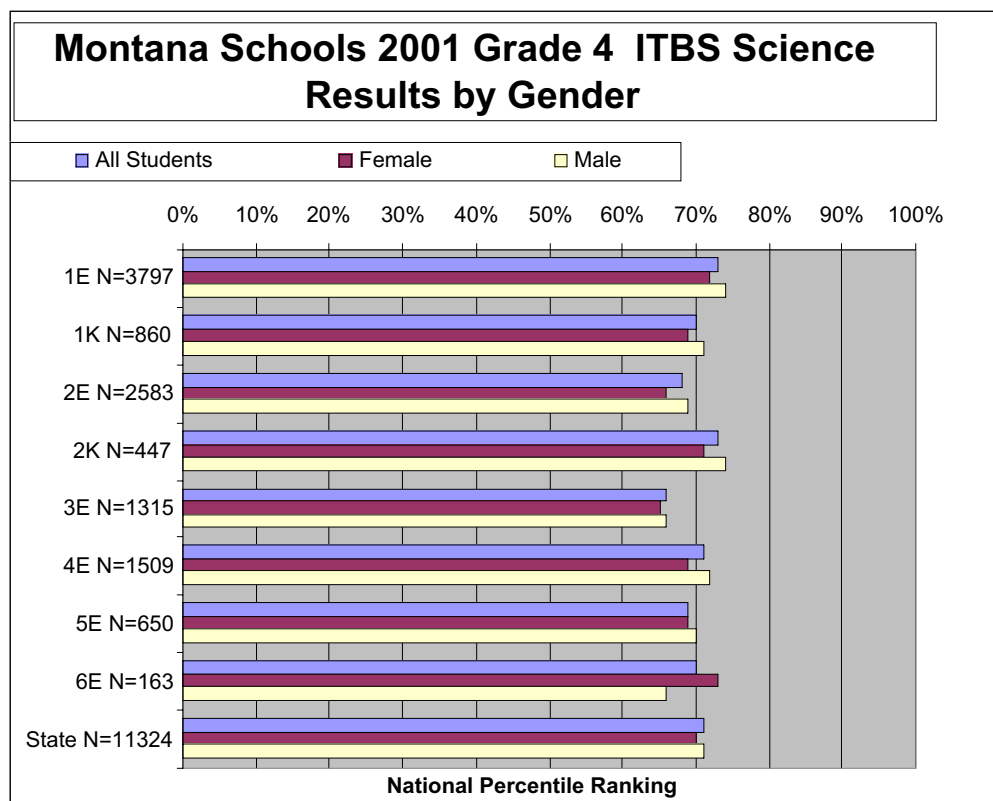
Of the 6,641 Montana students taking the ACT, 5,699 include white students and 319 include Native American students.

Chart 4.1 SC



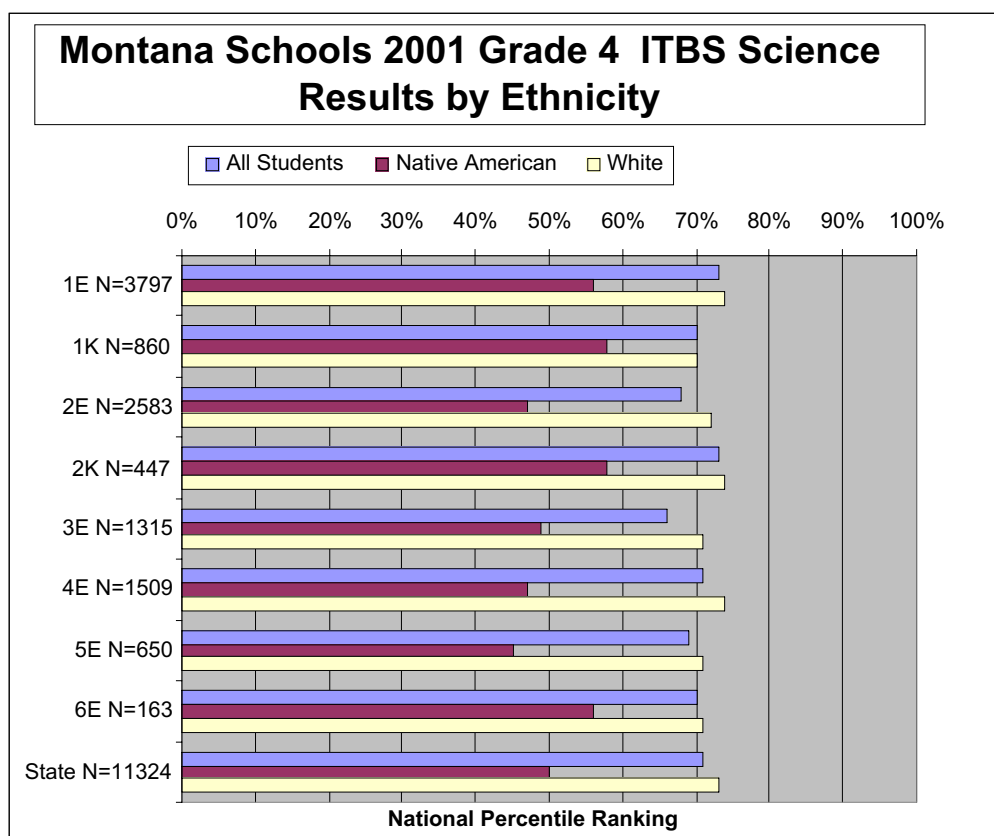
1. All students
  - The NPR for all Montana students is 71%.
2. Students without disabilities
  - Statewide, the NPR for students without disabilities is 72%. This number is stable with all districts plus or minus 3-4 percentage points.
3. Students with disabilities
  - Statewide, the NPR for students with disabilities tested is 50%. This number is somewhat stable with many district size categories at plus or minus 3-4 percentage points except 1E with 400 students scoring 56%, 3E with 106 students scoring at 44%, and 1K, 5E, and 6E whose student numbers are too small for comparisons.
4. Students without and with disabilities compared
  - Statewide, Montana students without disabilities scored 22 percentage points above students with disabilities, 72% and 50% respectively. This number is relatively stable with most districts 4-5 points plus or minus the 22 percentage points except district size categories testing small numbers of students with disabilities.

**Chart 4.2 SC**



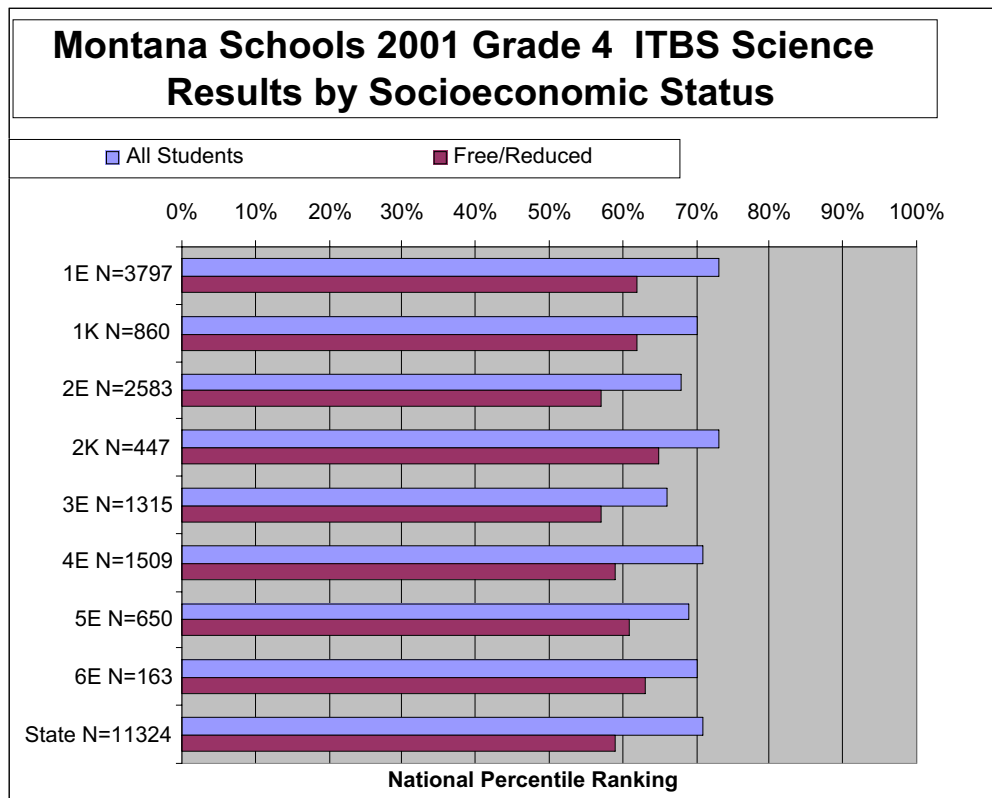
1. Male and female students
  - The NPR for all Montana students is 71%.
2. Female students
  - Statewide, the NPR for female students is 70%. That number is somewhat stable with most district size categories plus or minus 3-4 percentage points except 2E (66% for 1272 females tested) and 3E with (65% for 638 females tested).
3. Male students
  - Statewide, the NPR for male students is 72%. That number is relatively stable with most district size categories plus or minus 3-4 percentage points except for district size 3E (66% for 677 males tested) and 6E (66% for 78 males tested), but the number for 6E is small, making that data less stable.
4. Male and female students compared
  - Statewide, females scored about two percentage points below the males, 70% and 72% respectively, except for a very small number of students in 6E.

Chart 4.3 SC



1. All students
  - The NPR for all Montana students is 71%
2. Native American students
  - Statewide, the NPR for Native American students is 50%. This number is somewhat stable with many district size categories plus or minus 4-5 percentage points except 1E whose 266 Native American students scored 56% and 1K, 2K, and 6E whose student numbers are too small for comparisons.
3. White students
  - Statewide, the NPR for the White students tested is 73%. This number is stable with all district size categories at plus or minus 2-3 percentage points.
4. Native American and White students compared
  - Statewide, Montana White students scored 23 percentage points above Native American students, 73% and 50% respectively. This number is relatively stable with most districts 4-5 points plus or minus the 25 percentage points except 2K and 6E with smaller differences between Native American and White students, but the numbers are too small for generalizations.

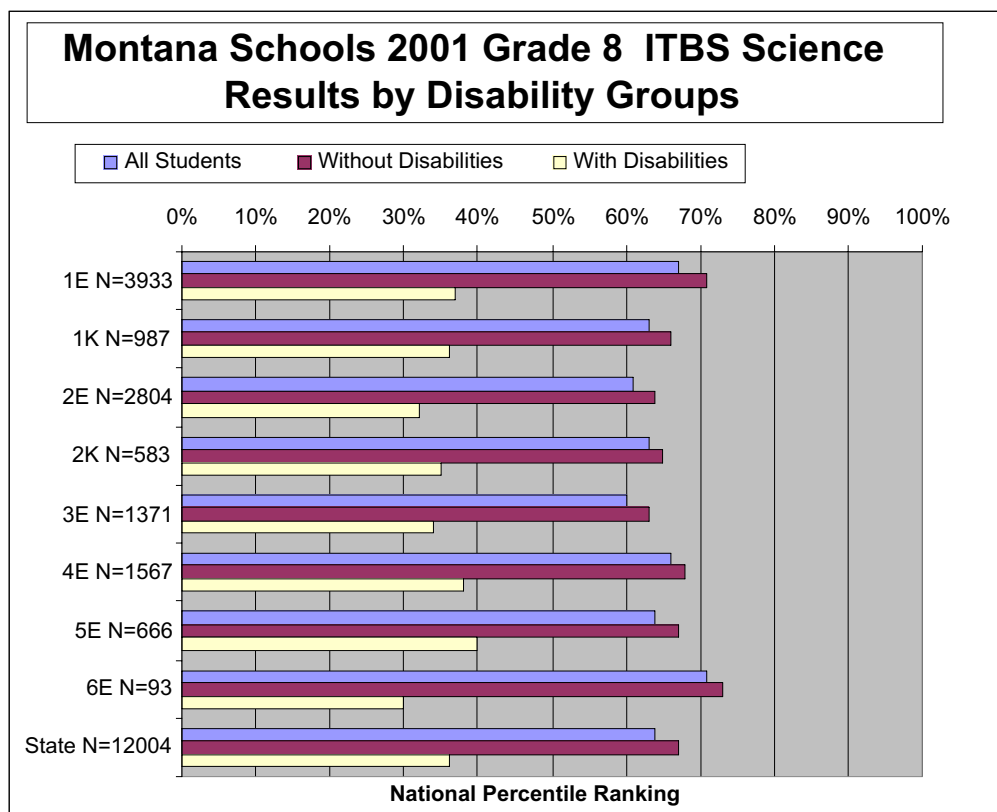
Chart 4.4 SC



1. All students
  - The NPR for all Montana students is 71%.
2. Students participating in free/reduced lunch programs
  - Statewide, the NPR for students participating in free/reduced lunch programs is 59%. This number is stable with all but one district size category scoring within plus or minus 3-4 percentage points. The 156 students in the 2K district size category who participated in free/reduced lunch programs scored 65.
3. Comparison
  - Statewide, all Montana students scored 12 percentage points higher than those participating in free/reduced lunch programs, 71% and 59% respectively.

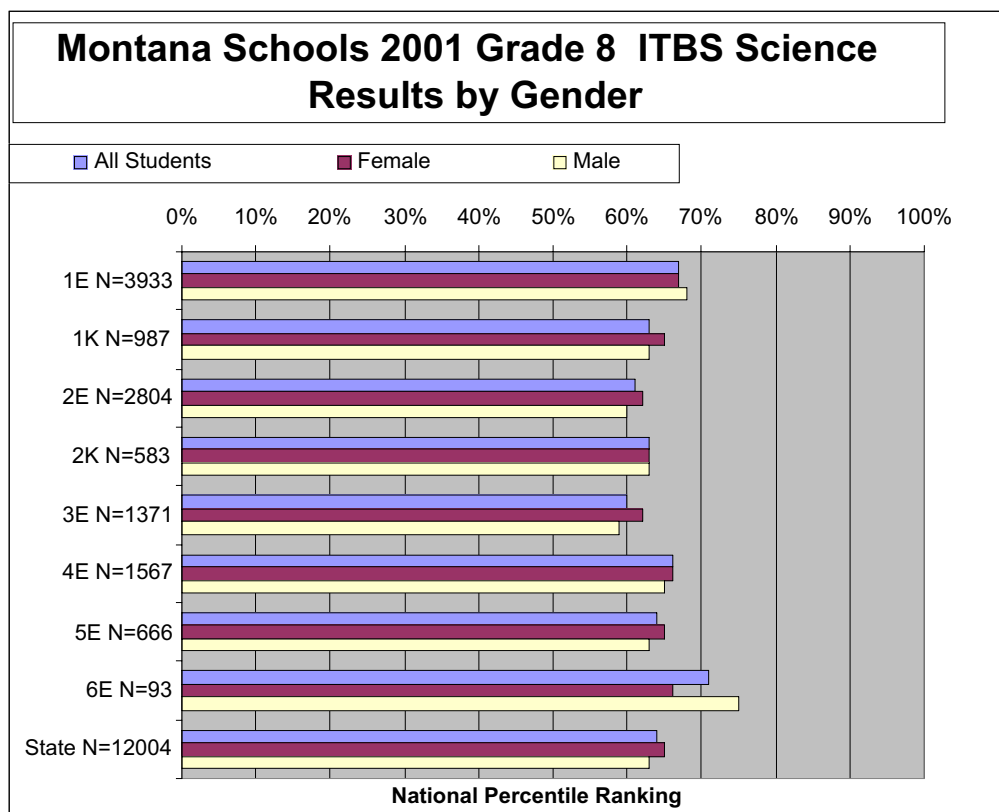


Chart 8.1 SC



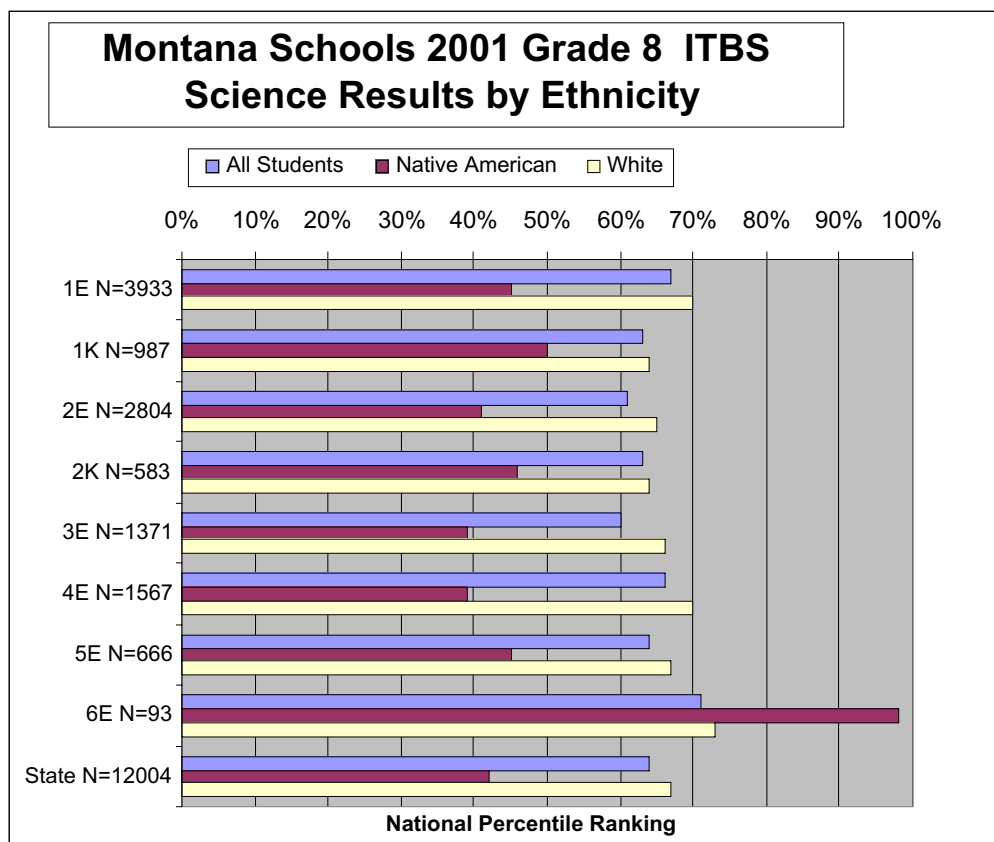
1. All students
  - The NPR for all Montana students is 64%.
2. Students without disabilities
  - Statewide, the NPR for students without disabilities is 67%. This number is stable with all districts plus or minus 3-4 percentage points except 6E whose student numbers are too small for comparisons.
3. Students with disabilities
  - Statewide, the NPR for students with disabilities tested is 36%. This number is stable with all district size categories at plus or minus 3-4 percentage points except 6E whose student numbers are too small for comparisons.
4. Students without and with disabilities compared
  - Statewide, Montana students without disabilities scored 31 percentage points above students with disabilities, 67% and 36% respectively. This number is relatively stable with most districts 4-5 points plus or minus the 31 percentage points except 6E whose student numbers are too small for comparisons.

**Chart 8.2 SC**



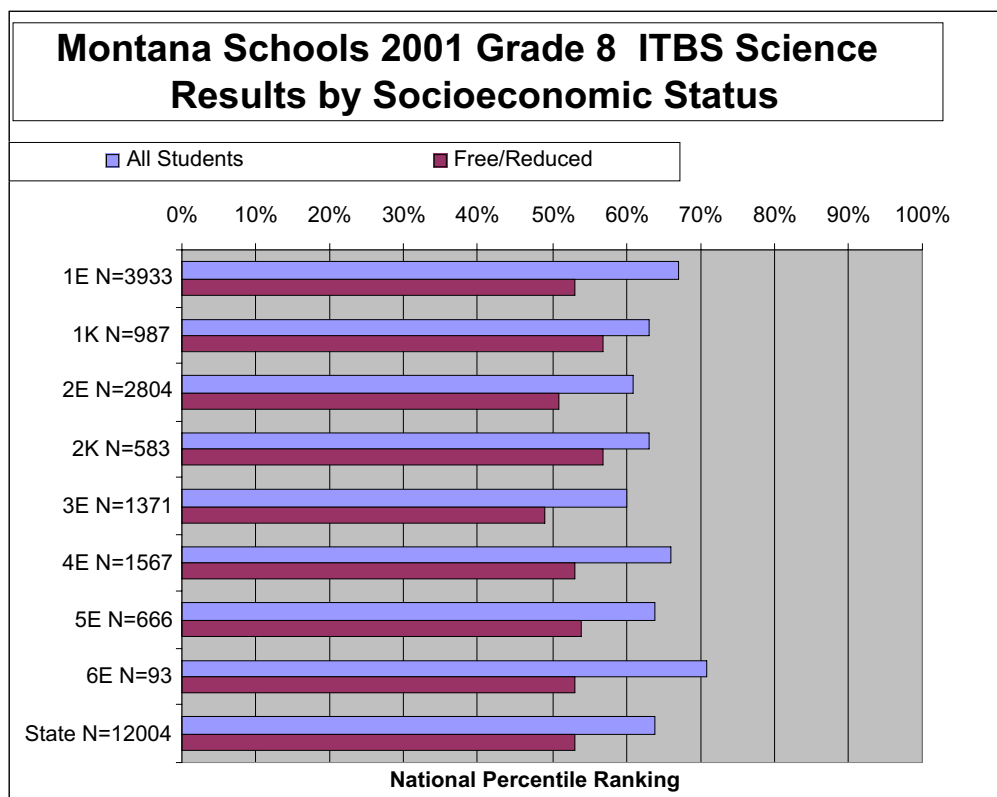
1. Male and female students
  - The NPR for all Montana students is 64%.
2. Female students
  - Statewide, the NPR for female students is 65%. That number is somewhat stable with all district size categories plus or minus 2-3 percentage points.
3. Male students
  - Statewide, the NPR for male students is 63%. That number is relatively stable with most district size categories plus or minus 3-4 percentage points except for district size 1E 68% for 1955 males tested), 3E (59% for 708 males tested) and 6E whose number is small, making that data less stable.
4. Male and female students compared
  - Statewide, females scored about two percentage points above the males, 65% and 63% respectively, except for a very small number of students in 6E.

Chart 8.3 SC



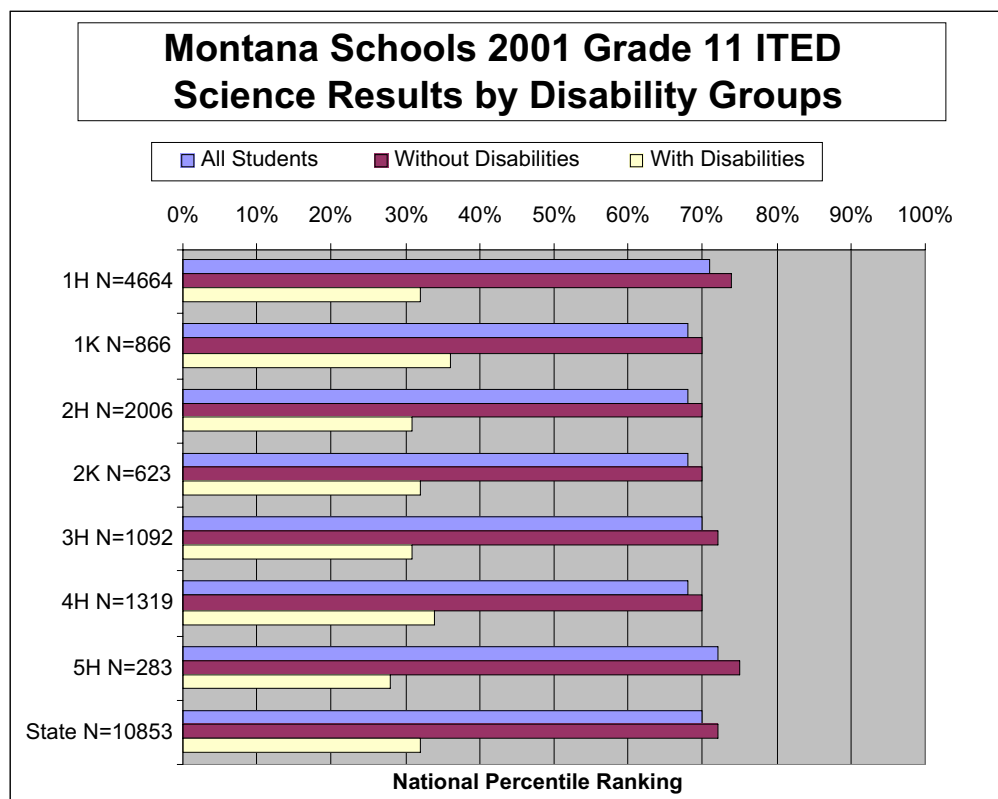
1. All students
  - The NPR for all Montana students is 64%
2. Native American students
  - Statewide, the NPR for Native American students is 42%. This number is stable with most district size categories plus or minus 2-3 percentage points except 1K and 6E whose student numbers are too small for comparisons.
3. White students
  - Statewide, the NPR for the White students tested is 67%. This number is stable with all district size categories at plus or minus 2-3 percentage points except 6E whose student numbers are too small for comparisons.
4. Native American and White students compared
  - Statewide, Montana White students scored 25 percentage points above Native American students, 67% and 42% respectively. This number is relatively stable with most districts 4-5 points plus or minus the 25 percentage points except for 1K, 2K, 4E, and 6E with different variations between Native American and White students, but the numbers are too small for generalizations.

**Chart 8.4 SC**



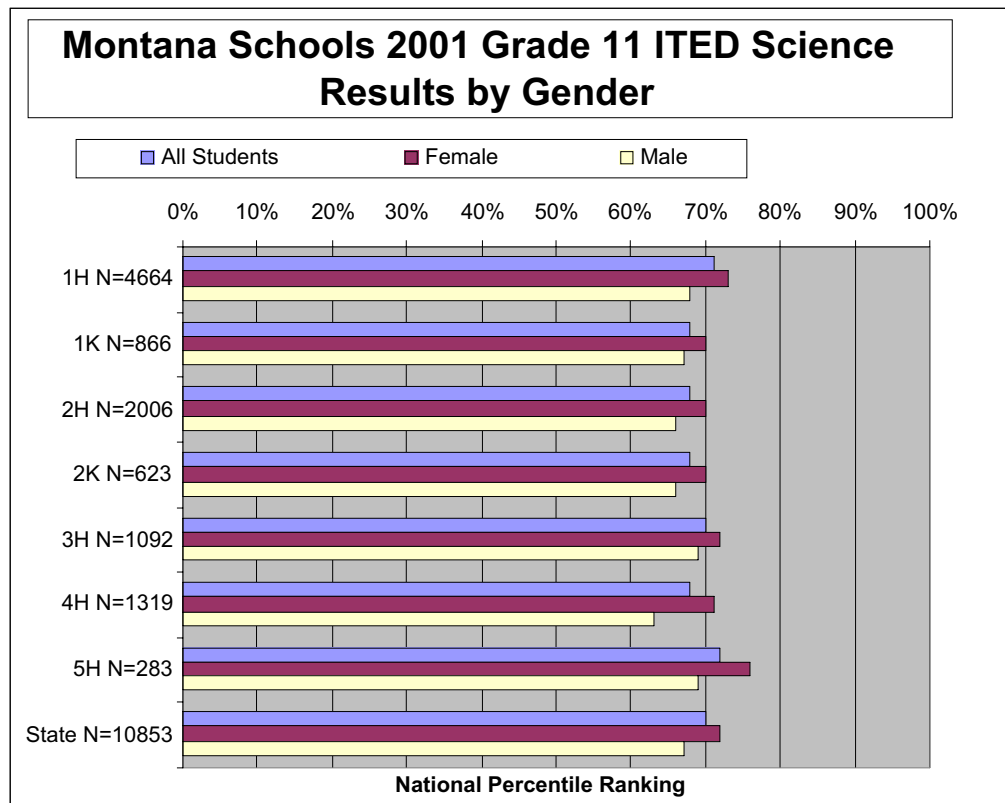
1. All students
  - The NPR for all Montana students is 64%.
2. Students participating in free/reduced lunch programs
  - Statewide, the NPR for students participating in free/reduced lunch programs is 53%. This number is stable with all district size categories scoring within plus or minus 3-4 percentage points.
3. Comparison
  - Statewide, all Montana students scored about eleven percentage points higher than students participating in free/reduced lunch programs, 64% and 53% respectively, except 6E whose small numbers make that data less stable.

**Chart 11.1 SC**



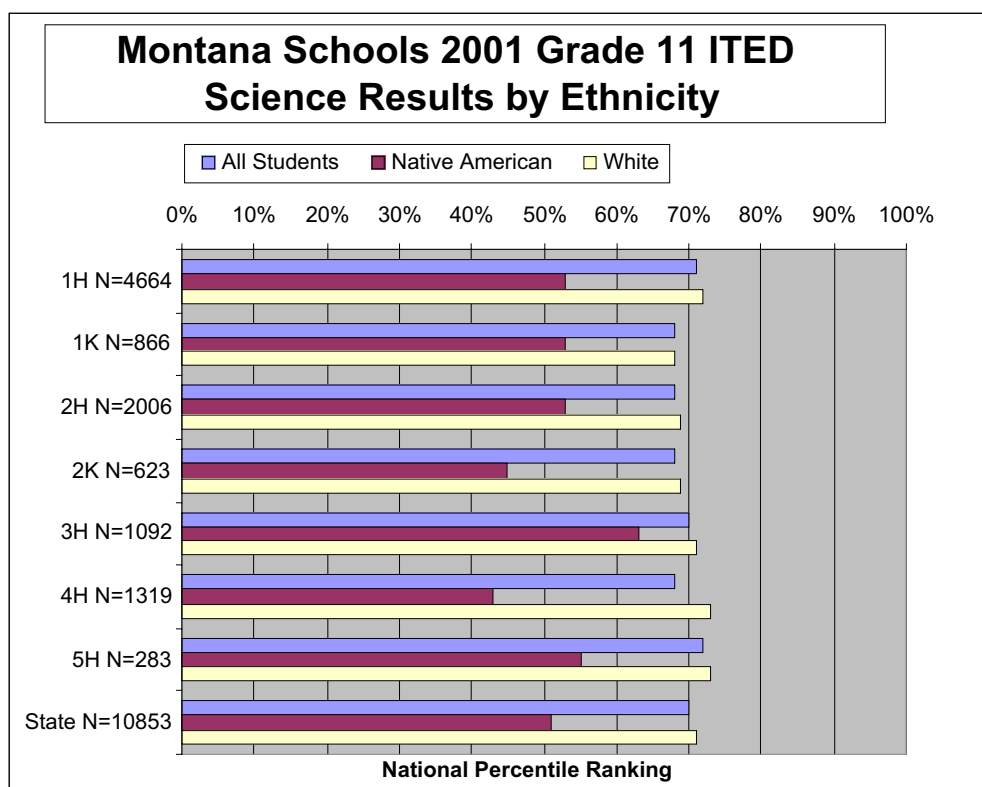
1. All students
  - The NPR for all Montana students is 70%.
2. Students without disabilities
  - Statewide, the NPR for students without disabilities is 72%. This number is stable with all districts plus or minus 3-4 percentage points.
3. Students with disabilities
  - Statewide, the NPR for students with disabilities tested is 32%. This number is stable with all district size categories at plus or minus 3-4 percentage points.
4. Students without and with disabilities compared
  - Statewide, Montana students without disabilities scored 40 percentage points above students with disabilities, 72% and 32% respectively. This number is relatively stable with all districts 4-5 points plus or minus the 40 percentage points.

**Chart 11.2 SC**



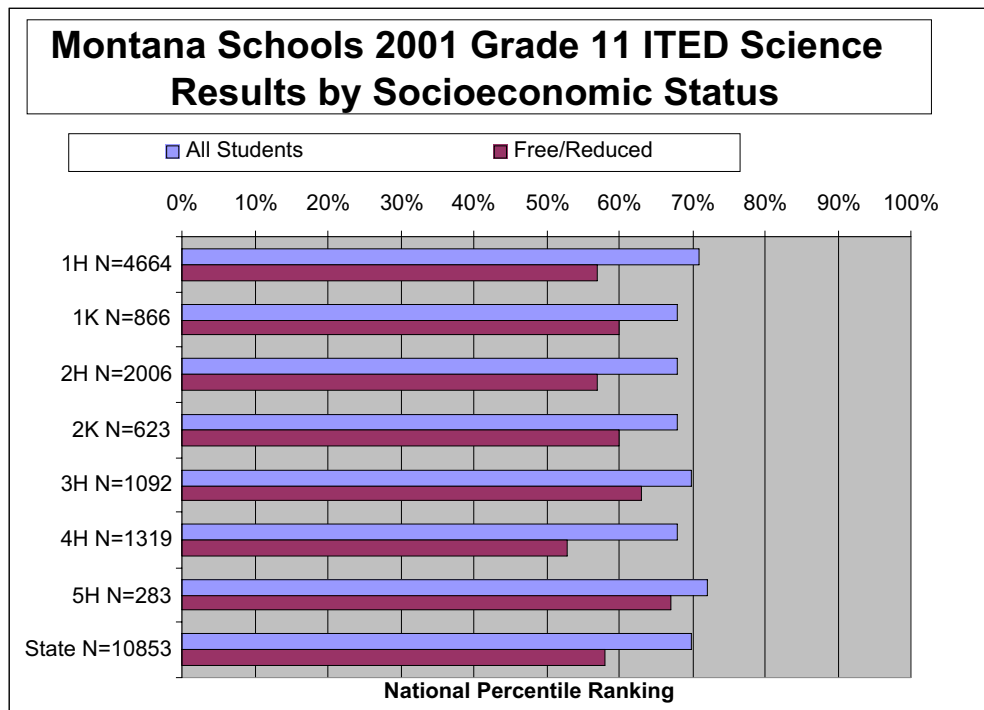
1. Male and female students
  - The NPR for all Montana students is 70%.
2. Female students
  - Statewide, the NPR for female students is 72%. That number is stable with all district size categories plus or minus 3-4 percentage points.
3. Male students
  - Statewide, the NPR for male students is 67%. That number is relatively stable with most district size categories plus or minus 3-4 percentage points.
4. Male and female students compared
  - Statewide, females scored about five percentage points above the males, 72% and 67% respectively.

**Chart 11.3 SC**



1. All students
  - The NPR for all Montana students is 70%
2. Native American students
  - Statewide, the NPR for Native American students is 51%. This number is stable with most district size categories plus or minus 3-4 percentage points except 4H whose 276 Native American students scored 43% and 2K and 3H whose student numbers are too small for comparisons.
3. White students
  - Statewide, the NPR for the White students tested is 71%. This number is stable with all district size categories at plus or minus 3-4 percentage points.
4. Native American and White students compared
  - Statewide, Montana White students scored 20 percentage points above Native American students, 71% and 51% respectively. This number is relatively stable with most districts 4-5 points plus or minus the 20 percentage points except for 1K (15 point difference), 3H (8 point difference), and 4H (30 point difference).

**Chart 11.4 SC**



1. All students
  - The NPR for all Montana students is 70%.
2. Students participating in free/reduced lunch programs
  - Statewide, the NPR for students participating in free/reduced lunch programs is 58%. This number is stable with all district size categories scoring within plus or minus 4-5 percentage points except 5H whose small numbers limit comparisons.
3. Comparison
  - Statewide, all Montana students scored about twelve percentage points higher than students participating in free/reduced lunch programs, 70% and 58% respectively, except for 3H students whose point difference is seven.